

CLAIMS

1. A hemicellulosic material comprising an oxidase supplement, a peroxidase supplement and optionally an oxidase substrate supplement.
2. The material of claim 1 wherein:
- (a) the oxidase is glucose oxidase; and/or
 - (b) the peroxidase is horse radish peroxidase; and/or
 - (c) the oxidase substrate supplement is glucose.
3. The material of claim 1 or claim 2 wherein the hemicellulosic material is derived from cereal flour, husk or bran, or from legumes (e.g. from maize, wheat, barley, rice, oats or malt).
4. The material of any one of claims 1-3 wherein the hemicellulosic material comprises a pentosan, e.g. a water soluble or alkali soluble pentosan fraction.
5. The material of claim 4 wherein the pentosan comprises arabinoxylan, for example, arabinoxylan ferulate.
6. The material of claim 5 wherein the hemicellulosic material consists or consists essentially of arabinoxylan ferulate.
7. The material of any one of the preceding claims in the form of a powder, for example a substantially anhydrous powder and optionally a dispersant (e.g. glucose or maltodextrin).
8. The material of claim 7 which comprises oxidase, oxidase substrate (e.g. glucose) and optionally peroxidase supplements, the material

being self-gelling on the addition of water.

9. The material of any one of claims 1-8 in the form of an aqueous solution.
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10. The material of claim 9 which is substantially oxygen free. ?
11. The material of claim 10 which comprises oxidase, oxidase substrate (e.g glucose) and optionally peroxidase supplements and which is self-gelling on exposure to oxygen.
12. A gel or viscous medium comprising the material of any one of claims 1-11 which has been oxidatively gelled.
13. The gel of claim 12 wherein the material comprises or consists essentially of cross linked arabinoxylan.
14. The gel of viscous medium of claim 12 or 13 in dehydrated form.
15. The dehydrated gel or viscous medium of claim 14 in rehydrated form.
16. A process for preparing a gel or viscous medium comprising the step of oxidatively gelling the material of any one of claims 1-11, "for example" by adding water to the material of claim 8 or by exposing the material of any one of claims 9-11 to oxygen.
- ✓ 17. A process for effecting oxidative gelation of a hemicellulosic material comprising the step of promoting the generation of hydrogen peroxide *in situ* with redox enzymes, wherein the redox enzymes comprise an oxidase and a peroxidase.
18. The process of claim 17 wherein the oxidase is horse radish

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peroxidase and/or the oxidase is glucose oxidase.

19. The process of claim 17 or 18 wherein the process comprises the steps of supplementing a hemicellulosic material with an oxidase and optionally an oxidase substrate and/or a peroxidase.
20. The process of any one of claims 17-19 wherein the generation of hydrogen peroxide is promoted by:
- (a) providing oxygen to the material (e.g. by generation or release *in situ*); and/or
 - (b) providing water to the material; and/or
 - (c) providing oxidase substrate to the material (e.g. by generation or release *in situ*); and/or
 - (d) activating one or more of the redox enzymes (e.g. chemically or physically),
- wherein the provision of oxygen or substrate may be by controlled release or generation *in situ*, "for example" by triggered generation or release by heat, irradiation or chemical treatment(s).
21. A gel or viscous medium produced by (or obtainable by) the process of any one of claims 16-20.
22. A process for producing a hemicellulosic material (for example a material according to any one of claims 1-11) comprising the step of supplementing a hemicellulose with an oxidase (e.g. glucose oxidase) and a peroxidase (e.g. horse radish peroxidase) supplement.
23. A material produced by (or obtainable by) the process of claim 22.

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24. A pharmaceutical or cosmetic preparation or medical device comprising the material, gel, viscous medium, dehydrated gel/viscous medium of any one of the preceding claims, the preparation or device being for example selected from: a wound plug, wound dressing, controlled release device, an encapsulated medicament or drug, a lotion, cream, suppository, pessary, spray, artificial skin, protective membrane, a nutraceutical, prosthetic, orthopaedic, ocular insert, injectant, lubricant or cell implant matrix, optionally further comprising an antibiotic, analgesic and/or anti-inflammatory agent.
25. The material, gel or viscous medium of any one of the preceding claims for use in therapy, prophylaxis or diagnosis, for example in the treatment of skin lesions (e.g. burns, abrasions or ulcers).
26. A wound dressing comprising the material of claim 11, for example in the form of a spray.
27. A bread improver comprising the material, gel or viscous medium of any one of the preceding claims.
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28. A foodstuff, dietary fibre source, food ingredient, additive, lubricant, supplement or dressing comprising the material of any one of claims 1-11, 23 or 25, the gel or viscous medium of any one of claims 12-14, 21 or 25, for example being selected from a petfood (wherein the gel e.g. acts as a binder), a flavour delivery agent, a canning gel, fat replacer (e.g. comprising macerated gel of any one of the preceding claims), a coating, a glaze, a bait or a gelatin replacer.

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